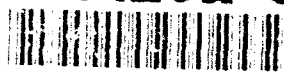


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NAVAL POSTGRADUATE SCHOOL Monterey, California



THESIS

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THE IDENTIFICATION OF
EARLY WARNING SIGNALS PRIOR TO
CONTRACTOR DEFAULT

by

Roch A. Switlik

December, 1992

Thesis Advisor:

David V. Lamm

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98 4 07 032

93-07331



10/17

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE

REPORT DOCUMENTATION PAGE				Form Approved MB No. 0104-0188	
1a REPORT SECURITY CLASSIFICATION			1b REPORT TYPE		
2a SECURITY CLASSIFICATION AUTHORITY			3 DISTRIBUTION AVAILABILITY STATEMENT		
2b DECLASSIFICATION/DOWNGRADING SCHEDULE			Approved for public release; distribution is unlimited		
4 PERFORMING ORGANIZATION REPORT NUMBER(S)			5 MONITORING ORGANIZATION REPORT NUMBER		
6a NAME OF PERFORMING ORGANIZATION		6b OFFICE SYMBOL (if applicable)		7a NAME OF MONITORING ORGANIZATION	
Naval Postgraduate School					
6c ADDRESS (City, State, and ZIP Code)			7b ADDRESS (City, State, and ZIP Code)		
Naval Postgraduate School Monterey, CA 93943					
8a NAME OF FUNDING SPONSORING ORGANIZATION		8b OFFICE SYMBOL (if applicable)		9 PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER	
8c ADDRESS (City, State, and ZIP Code)			10 SOURCE OF FUNDING NUMBERS		
			PROGRAM ELEMENT NO PROJECT NO TASK NO WORK UNIT ACCESSION NO		
11 TITLE (Include Security Classification)					
The identification of early warning signals prior to contractor default					
UNCLASSIFIED					
12 PERSONAL AUTHOR(S)					
Roch A. Switlik, Captain, United States Army					
13a TYPE OF REPORT		13b TIME COVERED		14 DATE OF REPORT (Year Month Day)	
Masters Thesis		FROM TO		92/12/17	
15 PRICE (AVAIL)					
102					
16 SUPPLEMENTARY NOTATION					
The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.					
17 COSATI CODES			18 SUBJECT TERMS (Continue on reverse if necessary and identify by block number)		
FIELD	GROUP	SUB GROUP			
19 ABSTRACT (Continue on reverse if necessary and identify by block number)					
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20 DISTRIBUTION AVAILABILITY OF ABSTRACT			21 ABSTRACT SECURITY CLASSIFICATION		
<input checked="" type="checkbox"/> UNCLASSIFIED UNLIMITED <input type="checkbox"/> SAME AS RPT <input type="checkbox"/> DTIC USERS			UNCLASSIFIED		
22a NAME OF RESPONSIBLE INDIVIDUAL			22b TELEPHONE (Include Area Code)		22c OFFICE SYMBOL
Lamm, David V.			(408) 656-2775		AS/LT

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The Identification of
Early Warning Signals Prior To
Contractor Default

by

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Submitted in partial fulfillment
of the requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

from the

NAVAL POSTGRADUATE SCHOOL

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Department of Administrative Sciences

Accession For	
NTIS	CRA&I <input checked="" type="checkbox"/>
ERIC	IAS <input type="checkbox"/>
Other	<input type="checkbox"/>
Availability Codes	
Dist	Avail and/or Special
A-1	

ABSTRACT

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I. INTRODUCTION

A. GENERAL

In the contracting environment of today, there are numerous uncertainties that the Government contracting officer as well as the private contractor must face. These uncertainties include a declining procurement budget for the Department of Defense (DOD), increased scrutiny of procurement actions by both the Congress and the public, as well as a very questionable economy. All these circumstances result in fewer Federal dollars being spent on Defense items and increased competition for those dollars. With fewer dollars to spend, it is imperative that DOD contracting officers ensure that the Government is getting the best value for the dollar. Given an increase in competition, one would think achieving the best value would not be difficult. However, history tells us in a depressed economy with increased competition, more Defense contractors are likely to "under bid" in order to receive Government contracts. [Ref. 1:p. 34] The Government paying a lower price, in and of itself is not bad, however this presents a potential performance problem with the contractor. Contractors submitting unrealistically low bids on contracts either hope to recover their losses through contract changes and modifications, which will drive the bottom-line price of the item up, or they may face increased financial risk and

potentially default on the contract. From the Government's perspective, the goal is to pay a fair and reasonable price and to receive the needed item. However, in today's troubled economy, with fewer available dollars, the potential for defaulting contracts may soon increase.

B. OBJECTIVES

Contract administrators do not have the time or resources to monitor every area of a contract during its performance. Therefore, the primary objective of this thesis was to determine if there are systemic indicators that may provide early warning signals to contract administrators that indicate the contractor may fail in complying with the contractual obligations, thus leading to Termination for Default (T for D). Once these indicators have been identified, contract administrators can focus their attention in these areas to ensure that a potential default is identified early-on during performance and additional resources can be utilized in an attempt to prevent a default or at least ensure that the Government's interests are protected.

C. SCOPE

The scope of this thesis is to provide an understanding of the contract administration process during contract performance, prior to the decision to recommend a Termination for Default. Additionally, this thesis will investigate the

areas more closely monitored by contract administrators and identify early warning signals that provide an indication of a potential contractor default. The information derived from this study is intended to aid contract administrators in focusing their attention and efforts during contract performance so that the Government's interests can be better protected. For control purposes, this thesis will focus on Fixed-Price Supply-type contracts.

D. RESEARCH QUESTIONS

To achieve the objectives of this study, the primary research question was:

What are the systemic indicators that provide early warning signals to Government contract administrators that a contract is in jeopardy of reaching default status?

From the basic research question, the following subsidiary questions were developed:

1. What is the purpose of contract administration relative to successful contractor performance?
2. What are the main areas monitored by contract administrators and what are the principal tools used in this process?
3. What are the key signals that contract administrators should monitor and track relative to contract performance?
4. What actions should contract administrators take in response to these key signals in order to protect the best interests of the Government?

E. ASSUMPTIONS AND LIMITATIONS

Four primary assumptions relevant to this study have been established. First, that the reader has a basic understanding of the Government contracting process. Second, the literature reviewed for this study is complete and accurate as of the date of this study. Third, the Defense Logistics Agency organizations used for obtaining data reflect an accurate cross section of contract administrators and contract monitoring procedures. Finally, the indicators or signals identified through this research are applicable to both small and large businesses.

A majority of the ideas and thoughts presented in the first part of this thesis are shared by multiple sources, however they will only be referenced to one source.

F. METHODOLOGY

The data for this study were obtained from several sources. First, the researcher conducted a thorough and extensive review of the available literature as well as the applicable laws and regulations. This literature review consisted of a local library search, theses from various graduate programs, and a custom bibliography from the Defense Logistics Studies Information Exchange (DLSIE).

Secondly, several telephone interviews were conducted with various contract administrators within the DLA organizations and industry.

Finally, a survey was sent to contract administration personnel located at the various Defense Contract Management Area Operations (DCMAO) offices and Defense Plant Representative Offices (DPROs) within each of the five DLA Districts.

G. THESIS ORGANIZATION

This thesis consists of six chapters. This chapter provided the objectives, scope, and methodology for data collection. Chapter II will address the subsidiary research questions that have been answered through the literature research conducted for this thesis. Chapter III will provide the methodology of data collection as well as a summary of the data collected. Chapter IV will provide an analysis of the data collected for this thesis. Chapter V will present a model to be used by contract administrators. Finally, Chapter VI will summarize the research findings, present the conclusions and provide recommendations for further research.

II. BACKGROUND

A. INTRODUCTION

Contracting with the Government is very different from pure commercial contracting. The Government, by law, as a sovereign body, protects itself and the interests of the taxpayer by including several unique clauses within the contracts that are made with the private sector. One of these protective clauses that the Government includes in all contracts is that of Termination. The Government has the right to terminate a contract in part or whole under several circumstances. To terminate a contract is simply to exercise a right not to continue with the contract. There are basically two types of Terminations with the most common being a termination for the convenience of the Government (Termination for Convenience: T for C) and the least common being a termination due to the default of the contractor (Termination for Default: T for D). [Ref. 2:p: 1-1] The primary difference between these two types of terminations is the purpose for which the contract is terminated. If the Government no longer needs a product or service (in part or whole) the contract may be terminated for convenience. However, if a contractor fails to perform to the established contractual obligations and breaches the contract, the

Government may terminate for default (in part or whole) and collect damages from the contractor. The Government has the right to terminate a contract any time during contract performance. However, a Government contracting officer should only terminate a contract as a last resort. [Ref. 2:p. 1-1]

The right to terminate a contract for default, provides protection to the Government when the contractor fails to perform. If a contracting officer fails to execute this right properly, the outcome may not be in the Government's best interest. Examples of undesirable outcomes due to improper execution of the default provision could be either the conversion of the default to one of convenience or the relaxation of material performance requirements without giving the Government proper consideration. Therefore, it is important that contract administrators are attuned to various indicators during contract performance, which may provide advance warning of contractor difficulty.

B. DEFINITION OF TERMS

To provide a common base between the reader and this researcher, the following definitions are provided to ensure the clarity of this research effort.

1. Procuring Contracting Officer (PCO)

A contracting officer at the procuring activity that has the authority to obligate the Government by entering into a contract. The PCO is responsible for ensuring the contract

is awarded to a responsible contractor, in the best interest of the Government. [Ref. 3:p. 2-1]

2. Administrative Contracting Officer (ACO)

The ACO is responsible for the overall management of the contract during performance. The ACO is the key interface between the Government and the contractor during contract performance. The ACO acts as the team leader among the many technical specialties used to manage and monitor the performance of the contract. The ACO is responsible for executing the assigned duties and functions outlined in Federal Acquisition Regulation (FAR) 42.3 and those delegated by the PCO. These duties include contract closeout, claims, disputes, negotiating changes and modifications, and handling appeals. [Ref. 4:p. 700]

3. Termination Contracting Officer (TCO)

A contracting officer that is responsible for settling terminated contracts to include both termination for convenience and termination for default. [Ref. 5:p.2-1]

4. Contract Administration Office (CAO)

An office that performs the administrative functions relative to Government contracts, to include both pre-award and post-award responsibilities as required by FAR 42.302 and delegated by the PCO. [Ref. 3:p. 2-1]

5. Contract Administration (Management)

The process of managing a Government contract during performance to ensure that the contractual obligations set forth in the contract are met by the contractor. [Ref. 6:p. 60,61]

C. PERSONNEL INVOLVED

There are many personnel specialties and skills required to properly manage the performance of a contract. Each of these specialties must work in cohesion so that all the aspects of contract performance can be monitored. The location of the personnel responsible for executing these specific technical tasks varies between Services. However, within the Defense Logistics Agency's Defense Contract Management Command (DCMC), all these specialties are at the various DCMAO offices except the Insurance and Pension personnel that are at the various District offices. These specialties include:

1. Contract Administrators

Personnel responsible for the administration of Government contracts during contract performance. Specific duties and responsibilities of a Contract Administrator are listed in FAR Part 42. The scope of a Contract Administrator is established by the FAR and may be limited by the appointing official. [Ref. 3:p. 2-1]

2. Price/Cost Analysts

Personnel responsible for providing expertise in quantitative pricing techniques and conducting reviews and evaluations of the contractor's or subcontractor's financial proposals and amendments. These reviews normally involve evaluating historical price and cost data that are available for comparative purposes. [Ref. 5:p. 19]

3. Engineers

Personnel responsible for providing technical support during contract performance and reviewing technical proposals, changes and/or modifications. [Ref. 5:p. 19]

4. Quality Assurance Representatives

Personnel responsible for inspecting items and processes to ensure that contract specifications and level of quality assurance meet specifications of the contract. [Ref. 7:p. d-4,5]

5. Industrial Specialists

Personnel responsible for overseeing the contractor's capability and actions to produce and deliver the products, services and systems as scheduled, within cost, and according to the terms of the contract. [Ref. 8]

6. Procurement Analysts

Personnel responsible for analyzing segments of the contractor's systems to include written policies, procedures, purchase order procedures and subcontract terms to determine

the contractor's ability to comply with the terms of the contract and Government regulations. [Ref. 8]

7. Property Administrators

Personnel responsible for the day-to-day assurance that Government property is used by the contractor as authorized by the contract and that the contractor maintains accountability of any Government property related to the contract under performance. [Ref. 9:p. 28,34]

8. Plant Clearance Officers

Personnel responsible for the day-to-day functions of redistribution of Government property and assets, normally upon contract completion or termination, in accordance with FAR Subparts 45.601-605 and 45.607-615. [Ref. 9: p:37]

9. Small and Disadvantaged Business Utilization Specialists (SADBUS)

Personnel responsible for counseling and assisting on DOD socioeconomic programs, policies and problems for small business, small disadvantage business, labor surplus area concerns and women-owned business concerns. Promotes the competitive position among small business. [Ref. 8]

10. Traffic Management Specialists

Personnel responsible for performing traffic and transportation surveys and evaluating any transportation related contract requirements as well as providing technical guidance. [Ref. 8]

11. Packaging Specialists

Personnel responsible for providing technical assistance to Government contractors on packaging, packing, preservation, material handling matters, interpretation and application of regulations, standards, and contractual requirements. [Ref. 8]

12. Industrial Property Management Specialists

Personnel responsible for providing a variety of property control systems during contract performance and possess signatory authority (letter of appointment) for any property related matters. [Ref. 8]

D. PURPOSE OF CONTRACT ADMINISTRATION

Once a Government contract has been awarded to a responsible contractor by the Procuring Contracting Officer (PCO), it is then normally assigned to a Contract Administration Office (CAO) for administration or management. The contract administration function is a management process designed to ensure that the contractor complies with the requirements of the contract. This management process is designed to ensure that the contracted supplies or services are delivered on time while meeting the required specifications. [Ref. 10:p. 90-14.2]

The CAO is required to perform approximately 83 different functions as outlined in the Federal Acquisition Regulation

Subpart 42.3. [Ref. 11:p. 2] The main responsibility of the CAO is to ensure that the contractor complies with the requirements set forth within the contract. Most important, the administrative functions and responsibilities of the CAO are designed to ensure that the Government does not suffer a loss on the contract.

The Administrative Contracting Officer (ACO) serves as the catalyst in the contract management process. The ACO is responsible for the overall process of contract administration. As the team leader, the ACO coordinates the efforts of several technical specialists and acts as the interface between the Government and the contractor. It is important to ensure that the Government communicates to the contractor through only one voice. [Ref. 10:p. 90-14.2]

To ensure effective and efficient contract administration, the ACO is supported by several technical specialists. This ACO team must have knowledge of current laws and regulations and skills in many management areas such as price analysis, financial management, systems reviews, negotiation techniques, production, property administration, transportation, as well as many others. This ACO team involves several key specialists as described above. Not only are there several specialists involved in the management process, but the sum of their duties is almost limitless.

Although a contract award would indicate that the PCO determined the contractor to be responsible, there may have

been key areas of contractor responsibility that were identified as marginal. Therefore, once a contract has been assigned to a CAO for management, the cognizant ACO should conduct a review of the pre-award information and process leading to contract award.

The ACO's post-award familiarization should include, at a minimum, a review of any prior performance information available and the pre-award survey. Special attention should be directed to any prior history the contractor may have had with the particular item or service being contracted for. Specifically, the contractor's past delivery performance, quality control, and past integrity issues should be reviewed. Additionally, the pre-award survey can provide a good insight to any potential problems that may arise with the contractor. For example, if the pre-award survey contains ancillary information, such as a bank letter of credit or outside guarantees of financing, this would indicate that the financial analyst was concerned enough to request assurance of the contractor's financial standing. This historical review of the contractor's past performance as well as familiarization with the contractor's status will provide the ACO with a sound sense of direction in which to focus administrative management efforts.

The ACO should also become familiar with the contractor's general line of business. Important considerations would include the type of contractor (e.g., small versus large

business), the contractor's current work load and plant capacity, and the contractor's current financial status. [Ref. 7:p. b-11]

It is during the management process that the ACO must closely monitor the performance of the contract and be alert to performance indicators that may provide advance warning of difficulties.

E. MAIN AREAS MONITORED BY CONTRACT ADMINISTRATORS

Contract administrators must focus their primary efforts on the critical areas based upon the nature of the contract and rely upon the functional area specialist to monitor contractor compliance in the other areas. The critical areas monitored by the ACO differ based upon the contract and the risk assessment as discussed above in paragraph D of this research. However, there are common areas that are consistently monitored by contract administrators. These areas are: Purchasing; Receiving; Accounting (Financial); Engineering (Technical); and Quality. Through the close monitoring of these areas, contract administrators will be in the best position to observe potential early warning signals indicating contractor difficulty in complying with the requirements of the contract. [Ref. 1:p. 52-58] [Ref. 4:p. 366-68]

F. PRINCIPAL TOOLS USED IN CONTRACT MANAGEMENT

There are many tools available to contract administrators to ensure effective and efficient contract management. The primary tools used by contract administrators are discussed below.

1. Planning

An effective tool in contract management is the development of a sound management plan. As discussed previously, effective planning and execution of those plans can aid in the proper employment of both technical and human resources. [Ref. 1:p: 50]

2. Communication

Another important tool in contract management is that of communication. Contract management is a team effort comprising the ACO and other technical specialists. Close coordination and communication between the ACO and the other members of the management team will ensure that all critical areas are addressed and that all members are kept informed of pertinent information. Research has indicated that a lack of communication has often been the cause where the Government lost its right to a T for D and consequently had to convert it to a T for C. [Ref. 1:p: 86]

3. Milestone Management

The development of a milestone suspense system is also an effective tool available to contract administrators.

During the planning for contract management, a milestone plan should be formulated. The milestone plan should be supported by a management information system that can provide notification to the ACO when a milestone is missed by the contractor. This suspense system is an important management tool due to the many responsibilities of the ACO. [Ref. 1:p. 52]

4. Site Visits

The use of periodic site visits by the ACO is another very effective management tool. Through these visits, the ACO can observe progress first hand, look into areas of concern, and ensure that emphasis is being placed upon any critical areas. However, due to the vast array of duties that an ACO must carry out and the time involved, regular site visitations are difficult to maintain. [Ref. 1:p. 50-52]

5. Reports

Many reports are generated periodically by the technical specialists that have specific areas of expertise. Furthermore, there are reports produced by the contractor as required by the contract through the various Contract Data Requirements List (CDRL). It is important for the ACO to be familiar with these reports and maintain visibility of the progress or problems within all areas of contract management. [Ref. 1:p. 53-58]

6. Performance-based Management (PBM)

A newer tool in contract administration within DLA, is called Performance-based management. This initiative is still being implemented within DLA. The thrust of PBM is to focus contract administration resources toward the areas in which they are needed the most. Traditionally, resources were allocated based on the size and dollar value of a contract rather than a risk management approach that would place resources where they are most needed. PBM emphasizes the allocation of resources based on the performance of the contractor. Therefore, a contractor with a high-dollar contract may receive less surveillance than another contractor with a lower dollar contract but higher risk or poor historical performance. The main tool used to obtain the data to determine where resources should be allocated is called "process oriented contract administration." This tool places emphasis on the critical processes that the contractor must perform, much like that of Total Quality Management (TQM). Moreover, PBM encompasses many tools of TQM to include In-plant Quality Evaluation (IQUE) and Integrated Systems Evaluation (ISE). [Ref. 12:p. 8,-26]

G. KEY SIGNALS AND NECESSARY ACTIONS

Of all the functions monitored by contract administrators, literature research indicates that the most prevalent early warning signals of contractor difficulty can be grouped into

three areas. These areas are: Lack of Physical Progress; Technical Difficulties; and Financial Problems. These areas are considered to include signals that are either passive or active indicators because they relate to an action that either did or did not happen. [Ref. 1:p. 50] For example, failure to make delivery of an item would be considered an active indicator because something definitely did not take place. Conversely, failure to receive a required report (e.g., test data) from the contractor would be considered a passive indicator. This indicator is considered passive because although you did not receive a required report, this does not necessarily mean the testing did not take place. Within the three areas mentioned above, many indicators can be identified in both the active and passive categories. [Ref. 1:p. 53,54] A brief discussion of these areas follows.

1. Lack of Physical Progress

An indicator of "lack of physical progress" will normally surface in the progress reports received by the ACO. These reports may come from the various technical specialists involved in the contract management process or the contractor himself. However, different agencies may have different reporting requirements. An example of these reports would be a periodic production report produced by the CAO's Industrial Specialist. Another active indicator, would be a contractor-requested extension of the delivery date. Finally, an example

of a passive indicator would be the failure to receive a required report.

As in all situations, communication between the respective CAO team members should be the first action taken by the ACO upon an indication of a physical progress problem. This communication would ensure that all pertinent information is brought forth and that all necessary team members are aware of the potential problem. Secondly, the ACO should discuss the concern with the contractor. Any further action to be taken by the ACO is dependent upon the nature of the problem and its severity. If the nature of the problem was caused by the Government (e.g., failure to deliver or late delivery of Government Furnished Equipment (GFE)) the ACO should attempt to remedy the problem as expediently as possible. This is important to prevent a breach of contract by the Government, thus having to provide consideration to the contractor. However, if the problem is clearly the fault of the contractor, the ACO must take action dependent upon its seriousness. If the problem is considered minor and can be corrected by additional technical support or supervision, the ACO should attempt to rectify the problem before it becomes substantial. If the ACO feels that the problem is significant enough that it may endanger performance of the contract, the ACO should notify the PCO and/or the Project Manager, as is appropriate, and a Cure Notice should be sent to the contractor. [Ref. 1:p. 54] A Cure Notice is a letter of

caution identifying the failures and giving the contractor 10 days to make corrections. A Cure Notice should not be used if the contractor has already defaulted on the contract. [Ref. 2:p. 2-10]

2. Technical Difficulties

There are several signals that may arise during contract performance, indicating that the contractor is experiencing technical difficulties. The most obvious active indicator would be if the contractor requested a waiver or deviation to the technical specifications of the contract. Although the contractor may have a justifiable reason for requesting the waiver or deviation, it is an area that may need additional attention. It is important to understand that indications of technical difficulty do not always clearly identify the cause of the difficulty.

In attempting to identify the cause of the problem, the ACO should consult the industrial specialist and/or the Quality Assurance Representative (QAR) assigned to the contract. For example, the technical problem may have been caused by the Technical Data Package (TDP) provided by the Government. However, if the cause of the problem is clearly one of the contractor's technical inabilities, the steps outlined in paragraph 4 below would be appropriate. [Ref. 1:p. 56] Finally, adverse reports by Government technical specialists also provide good indicators.

3. Financial Problems

The ACO is directly responsible for monitoring the contractor's financial condition. [Ref. 3:p. 42-4] One of the most obvious active indicators that the contractor is facing financial difficulty, is when an upward price adjustment is requested. However, a more frequent indicator of financial difficulty is when the contractor requests revised payment provisions (e.g., unusual progress payments or advance payments), after contract award.

If the ACO elects to grant advance or unusual progress payments, a Report of Adverse Development should be issued to the PCO. [Ref. 1:p. 57] More important, if the contractor has, or is about to declare bankruptcy, the ACO should notify the PCO by the most expedient means possible. Furthermore, other indicators of financial difficulty are bank assignments and loss ratio applications to progress payment requests.

Whatever the indicator, financial difficulty is the leading cause of terminations for default among small businesses. [Ref. 13:p. 14] Therefore, it is imperative that the ACO maintain constant visibility over the contractor's financial condition. [Ref. 1:p.57]

4. Actions

The areas and indicators discussed above are not considered comprehensive or complete. However, according to the literature research, they do represent the most prominent

generic indicators applicable to all types of contracts. Furthermore, despite the area involved or the type of indicator, the ACO must initially determine the nature, cause, and severity of the problem. Moreover, the occurrence of multiple indicators simultaneously, is a clear indication of serious problems. [Ref. 1:p. 58]

It is imperative that the ACO keep the PCO informed of potential problems. If the problem is significant, the ACO must act promptly to protect the interest of the Government. When an indicator is observed and the situation is deemed serious, there are certain steps required by the Federal Acquisition Regulation Part 49. The first step in protecting the Government's interest is to send a Cure Notice to the Contractor. The Cure Notice specifies the failures and prescribes a cure period of not less than ten days. [Ref. 2:p. 2-,5-11] If the contractor fails to correct the deficiency within the cure period, the contracting officer may then send the Show Cause Letter. The Show Cause letter informs the contractor that the contracting officer is considering terminating the contract for default. The letter allows ten days for the contractor to respond and present information as to why the contract should not be terminated. [Ref. 2:p. 2-,5-11]

At all times during the process to identify the problem and assist the contractor if appropriate, the contracting officer should consult legal counsel for advice in determining

if a termination for default is supportable. When considering a T for D, the contracting officer must be proactive so that the Government's interests are protected. Being proactive involves prompt communication and correspondence with the contractor, as well as with all Government agencies and personnel either effected by the T for D or responsible for working with the contractor. Prompt communication can help ensure that the Government does not forfeit its right to T for D.

H. SUMMARY

The responsibilities and functions of the CAO are many and require the expertise of several technical specialists. It is the ACO's responsibility to coordinate the efforts of the management team and exercise all available resources to ensure that the contractor performs according to the contract. During the management process, the ACO must be attuned to early warning signals that may indicate a contractor's failure or difficulty to comply with the contract and take the necessary actions to assist the contractor and protect the Government's interest.

This chapter provided an overview of the responsibilities of contract administration and the administrative contracting officer. Chapter III will present the data that were collected through a survey conducted throughout DLA's Defense Contract Management Command. This survey was designed to

identify the most commonly monitored areas by ACOs as well as any systemic indicators that may provide early warning signals of contractor difficulty during contract performance, which were not addressed in the current literature.

III. METHODOLOGY AND DATA PRESENTATION

A. INTRODUCTION

This purpose of this chapter is two-fold. First, it will describe the methodology employed to conduct the survey for this research effort. Secondly, this chapter will present a summary of the data collected. An analysis of the data collected will be presented in Chapter IV.

This survey was conducted to obtain current data to supplement the available literature in answering the research questions identified in Chapter I. The foundation for this survey was the research efforts of Daniel M. Carr and Duane D. Knittle conducted in 1980. [Ref. 1] This survey was not intended to validate their research efforts, but to ensure its accuracy in today's environment and provide greater depth. The focus of this survey was to extract from the experience of contract administrators, the areas that are monitored more closely during the performance phase of a contract. Furthermore, within these areas, an attempt was made to identify the signals that provide advance warning of contractor difficulty, which may lead to default during contract performance.

The questions asked were designed to aid in the formulation of a pertinent list of early default warning

signals that can be monitored by contract administrators. This list of indicators can be used by contract administrators in a "risk reduction" effort through proper allocation of resources, which can aid in ensuring contract performance and better protect the Government's interest.

B. METHODOLOGY

The Defense Logistic Agency's (DLA) Defense Contract Management Command, served as the base population for the survey, primarily due to their broad responsibility for contract administration for all Services. A total of 15 surveys were sent throughout the five DLA Districts. Three surveys were sent to each district, one to a Defense Plant Representative Office (DPRO) and one to two different Defense Contract Management Area Operations (DCMAO) offices. Additionally, a survey was sent to the Department of the Navy's Ship Parts Control Center (SPCC), due to their many contracts for spare parts. Finally, to gain an industry perspective, one survey was sent to a subcontract specialist working for Westinghouse. Besides the surveys, telephone interviews were conducted with several DCMAO Commanders and ACOs, at the respective DLA organizations used for the survey.

Statistically, all 17 agencies responded to the survey, providing a 100% response rate. Even though seventeen (17) surveys were sent out, 31 surveys were returned due to several agencies returning multiple copies, each completed by

different contract administrators. The survey was constructed with both objective and subjective type questions. Although the survey received more than a 100% overall response rate, some respondents did not respond to all questions.

C. DATA SUMMARY

This section will address the questions used in the survey. Each question will be addressed individually. The survey results will be summarized statistically for the quantifiable questions and subjectively for the open-ended questions.

Survey Questions.

1,2,3. The first three questions of the survey were designed to gain background information on the respondent. The survey results indicated that all respondents were in the procurement field and responsible for contract administration with 71% having over 10 years of experience, 23% having 6 to 10 years of experience, and 6% having less than two years experience in the contract administration field.

4. How often does your agency conduct a T for D?

This question was poorly worded by this researcher and caused some confusion. The question should have asked, "How often does your agency recommend a T for D?" Several respondents inquired by telephone to gain clarity. However, many respondents failed to answer the question or answered

inappropriately. Therefore, the survey results from this question will not be used for further discussion or analysis.

5. Of the default actions that your agency has recommended over the past three to five years, were there performance indicators that surfaced prior to the actual T for D decision that provided advance warning of contractor difficulty? If yes, please list.

This question was designed to determine if early warning signals do appear to contract administrators that provide an advance warning of contractor difficulty that may lead to default. This question received an 87% response rate. The results of the survey were:

[70% responded YES] [30% responded NO]

Of the 70% positive responses, the most common indicators listed by the respondents appeared in these areas: Financial; Delivery; Quality; Production; and Technical Competence. Within each of these areas, the most commonly listed indicators are summarized below:

Financial. Poor loss ratio on progress payments and complaints by subcontractors and vendors of nonpayment.

Quality. History of poor quality; lot rejections; failed reinspections; adverse reports from QAR and contractor; contractor questioning specifications and standards; inspection failures; and raw material problems.

Delivery. Delinquent delivery or notification of an expected late delivery.

Production. Adverse reports; unproven tooling; non-conforming vendor parts; non-responsive vendors; raw material problems; new item production; instantly revised production plans; questionable facilities and equipment; poor manufacturing plans; and schedule problems.

Technical. Requests for deviations and waivers; requests for Government assistance; Technical report problems; and First Article failures.

The indicators provided by the survey respondents that were unique included key personnel departures and failure to produce the required data reports (CDRLs).

6. Based on research, listed below are the major areas that are monitored by Contract Administrators. Which of these areas, in your experience, provide the best early warning signals of potential contractor default? Please comment.

This question was designed to learn if any particular area provides a more reliable or a better early warning signal than the others. This question received a 100% response rate. The percentages listed beside each category indicate how the respondents replied to this question.

14% Progress Difficulties
14% Technical difficulties
19% Financial Difficulties
6% Other (please indicate)
47% All three are equal

Most of the respondents felt that all three areas are equal, with the three specific areas receiving almost equal ranking.

7. Are there other areas that are monitored just as often as the three that were listed in question six? If Yes, please list.

This question was designed to learn if there are other management areas that contract administrators monitor just as often as those indicated by the literature. The question received a 94% response rate. Of those that did respond, the results are shown below.

[41% responded YES] [59% responded NO]

The 41% that responded YES, indicating that there are other areas, also provided some of these indicators. The most common other monitored areas provided by the respondents were Production and Quality. The indicators provided were: Vendor and Subcontractor Complaints; lack of communication or failure to respond to phone calls, FAXes, and letters. More specifically, when the contractor's communication to the ACO becomes sloppy, unusable, inaccurate or incomplete, potential problems may be developing. Furthermore, strained relations between the ACO and the contractor was offered as a strong indicator of potential problems. Finally, many respondents said that although there are common areas that must be monitored, the most effective area depends upon the type of contract and item or service being procured.

8. In order of priority (1,2,3, etc.), rank the importance of monitoring the following areas: Progress; Technical; Financial; Other Areas; All are equal.

This question was designed to find out the priority in which contract administrators felt that their efforts should be directed. This question received a 100% response rate. The percentages listed beside the categories show their statistical ranking.

1st	2nd	3rd	
35%	30%	19%	Progress
13%	35%	48%	Technical
26%	30%	33%	Financial
	5%		Other
26%			All are equal

Although 35% of the respondents felt that progress was the most important area to monitor, several respondents said that a combination of areas must be monitored equally based on the type of procurement. The 5% responding in the "Other" category said that Quality should be the second most critical area to be monitored. Furthermore, some comments indicated that contractor problems in one area will lead to problems in others. Additionally, several comments were provided which tied progress difficulty as a subsequent indicator to delivery. Furthermore, comments were made stating that financial difficulties would often lead to progress difficulties as well.

9. Does your organization have, in place, a Milestone-type management plan to aid in the administrative contract management functions?

This question was designed to learn how proactive the contract administration agencies are in developing systems to support the management process. The question received a 90% response rate. Out of those responding to this question, the results were:

[43% responded YES] [57% responded NO]

The responses to this question varied considerably from very detailed plans, to no systems at all. From the 43% responding YES, some examples were provided. The most sophisticated system involved a computer (Information Management Network) that generated computer alerts when a contract was approaching a milestone deadline. The respondent said that this system is only used on the more complex programs (e.g., Acquisition Category I), with high risk, and large dollar value contracts. More common responses included the utilization of Mechanization of Contract Administration Services (MOCAS) and a program level milestone plan.

Of the 57% responding NO to this question, several reasons for the lack of planning were provided. These reasons included: lack of personnel, lack of management guidance, too many small contracts to effectively monitor, and two respondents said that they were unaware of any such management system within their organization.

Finally, many respondents said that milestone-type management plans are only developed for certain contracts and are structured according to the type of procurement. The respondents said that milestone planning is normally developed for large contracts involving ACAT I type programs. No indication was made by any of the respondents that a comprehensive plan was in effect that covered all procurements, despite their size, risk, or any other similar characteristics.

10. Prior research has provided two categories of passive indicators (Interim Milestone Slippage and Terminal Milestone Slippage). From your experience, do these provide valuable insight, and are there other passive indicators that provide advance warning of potential contractor default?

This question was designed to learn the value of milestone management systems in providing passive indicators of contractor difficulty. Although this concept was explained in an information paper provided to all survey respondents, this question only received a 58% response rate.

Of the 57% that responded to this question, only six respondents offered other passive indicators of potential problems. The most notable indicator was when difficulties are encountered during the post-award conference, which are not resolved satisfactorily by both parties. The other indicators included: lack of request by the contractor for milestone billing, waiver and deviation request, notification

by subcontractors of failure to receive payment from the prime contractor, monitoring the contractor's plant capacity for over committing of resources, and monthly written progress reports that indicate failure to make progress with the milestone plan.

Some respondents said that they are not exposed to the milestone slippages and other passive indicators such as technical reports. Additionally, some respondents said that while they have milestone type plans, they are not monitored.

Finally, other comments provided by the respondents ranged from total agreement that these two indicators are good early signs of potential problems to total disagreement, without explanation.

11. Considering the below list, are these reports effective in providing early warning of potential contractor default?

Physical Progress Reports

- Adverse Contractor provided Progress Reports
- Adverse DCMC Progress Reports
- Adverse Contracting Officer's Technical Representative (COTR) Progress Reports
- Requests for Delivery Extensions

This question was designed to determine how effective these indicators are in providing advance warning of contractor difficulty in performance of the contract. This question received a 100% response rate as broken down below.

[87% responded YES] [13% responded NO]

Of the 13% responding "NO," the most notable response was the volume of contracts that an ACO is faced with

administering. The respondents commented that although the reports do bring potential problems to light, by the time the reports are reviewed, the problem has developed into a much more serious situation. Additionally, one respondent questioned the validity of many contractor-generated reports, due to the adversarial relationship often present in Government contracting. Further explanation was provided that in adversarial relationships, reports may contain misleading information. The Government frequently receives "just the truth" but not necessarily the "whole truth." Furthermore, 10% of the respondents said that Government reports were more reliable than those produced by the contractor.

12. Are there other effective "Lack of Physical Progress" indicators that were not previously listed?

This question was designed to identify other indicators of a "Lack of Physical Progress," that were not indicated in the literature. The question only received a 71% response rate. The responses to this question were:

[64% responded YES] [36% responded NO]

Of the positive responses to this question, over 27% said that periodic progress payment reviews will indicate when the contractor is experiencing difficulties making progress. More specifically, if the review provides information that shows that the contractor is in a loss position with respect to progress payments or that the fair value calculation on the

progress payment is at a loss, difficulty in making progress can be expected.

Other indicators of progress problems that were provided through the survey are: failure of the contractor to pass technical tests, untimely delivery by subcontractors, notices of "Delay in Delivery", delays on other concurrent programs, letters from contractors indicating problems, and site visits.

Finally, physical progress problems may be caused indirectly if the contractor is experiencing difficulties in other areas of business.

13. Research has provided the below list of technical difficulty indicators. Do these indicators provide adequate advance warning of potential contractor default?

Technical Difficulties

- Requests for Waivers/Deviations**
- Adverse DCMC Technical Reports**
- Adverse COTR Technical Reports**

This question was designed to learn how well technical reports indicated a potential contractor problem that may result in a default contract. This question received a 94% response. The survey results are:

[69% responded YES] [31% responded NO]

From the 69% that responded "YES" to this question, supporting comments were provided that reinforced the need for the reports and the value added if they are accompanied by comments from the Government's Technical Representative. The necessity for input from technical personnel was repeated

throughout the survey responses and justified by indicating the ACO's lack of technical expertise.

Eight of the survey respondents addressed requests for Waivers or Deviations. Out of these eight respondents, six felt that requests for Waivers or Deviations are not good indicators of technical difficulty while two stated that they are good indicators. An additional two comments directed at Waivers or Deviations were also received with further qualifying statements. One comment said that Waivers or Deviations are only good indicators when accompanied by adverse technical reports. The other comment said that only excessive requests (excessive was undefined) for Waivers or Deviations are good indicators.

Furthermore, one respondent said that the best source for identifying technical difficulty was the on-site Government representative or the Contracting Officer's Technical Representative (COTR), while another said that they rarely received reports from the COTR.

Out of the 31% responding NO to this question, 22% felt that old, inaccurate, or incomplete Technical Data Packages (TDPs) were the leading cause of technical difficulty experienced by contractors and therefore a good indicator of potential problems. However, a technical failure caused by the Government's TDP would most likely not lead to a default by the contractor. It may, however, result in a termination

for the convenience of the Government on the basis of impossible performance using existing TDPs.

Finally, 7% of the respondents said that neither adverse reports, nor requests for Waivers or Deviations, in and of themselves, were indicators of technical problems that may identify a potential default by the contractor. These comments were further augmented by statements that these indicators must be accompanied by other indicators such as financial problems.

14. Other than the indicators listed above, are there other methods of determining technical difficulties that may suggest a potential default situation?

This question was designed to help identify other indicators of technical difficulty that were not gained from the literature. This question had a 90% response rate with several additional indicators being provided. The survey results are:

[71% responded YES] [29% responded NO]

Out of the 71% responding "YES" to this question, 30% stated, based on experience, that one of the most significant indicators of technical difficulty is the contractor's continued questioning of Government specifications, or claiming that the specifications are inadequate. Additionally, 10% of the respondents felt that returned items or lot rejections for technical inadequacy, are the best indicators of technical difficulty. Furthermore, 10%

responded that repetitive Engineering Change Proposals (ECPs) were good indicators of technical difficulty and are being used to bypass the Government's specifications that the contractor is not able to comply with.

The more isolated indicators provided by the respondents were: contractor request to redefine the testing requirements, delays by the contractor in submitting required drawings, failing tests due to technical problems, and technically non-conforming components.

15. Review the list below of financial indicators. Do these indicators provide adequate advance warning of possible contractor financial difficulties that may lead to default?

Financial

- Request for Upward Price Adjustment
- Request for Revised Payment Provisions
- ACO Report of Adverse Developments
- Bank Assignments
- Loss Ratio Application to Progress Payment Request
- Revised Financial Statements

This question was developed to learn how effective traditional financial indicators are in predicting contractor difficulty that may lead to default. The question received a 90% response rate. The percentages listed below show the response to this question.

[86% responded YES] [14% responded NO]

Out of the 14% responding "NO" to this question, most of the comments showed that these indicators "in and of themselves," are not necessarily indicative of potential contractor problems. Furthermore, 10% of the total

respondents felt that Bank Assignments were stronger indicators of potential financial difficulty.

Of the six indicators that were listed as part of this research question, 8.3% of the total respondents felt that the first three are good early warning signals of contractor difficulty. However, they felt that the last three indicators, while signals of difficulty, do not appear until it is too late to assist the contractor. Therefore, these respondents did not feel that the last three indicators were the best ones for ACOs to monitor.

Finally, 8.3% of the total respondents felt that these indicators are only applicable to larger dollar contracts. Comments from the respondents said that ACOs only monitored large dollar contracts and that this information is not readily available on the smaller contracts.

16. Other than those financial indicators listed above, are there other methods of determining financial difficulties that may suggest a potential default situation?

This question was developed to identify additional or alternative indicators of financial difficulty. This question received an 87% response rate. The survey results were:

[63% responded YES] [37% responded NO]

Out of the 63% responding YES to this question, 29% felt that the strongest indicator of financial difficulty is subcontractors' complaints of non-payment. The second most listed indicator, supported by 24% of the respondents, was

information available in the contractor's Dun and Bradstreet Report. Thirdly, 18% of the respondents listed DCAA reports and when the contractor revises the financial statements as the best early indicators of contractor financial difficulty. Interestingly, only 3% of the respondents felt that progress payment reviews provided strong financial indicators.

D. SUMMARY

This chapter presented the data obtain through a survey conducted by the researcher. The results were quantified where possible and comments summarized. Several areas within the contract administration field were listed as important to monitor with specific indicators being identified. Chapter IV will provide an analysis of the data that were obtained through the literature research and the survey.

IV. ANALYSIS OF DATA

A. INTRODUCTION

This chapter will contain an analysis of the data summarized in Chapter III. An analysis of the survey results will be contrasted with the current literature and telephone interviews conducted by this researcher. This analysis will be broken down into the following areas:

- o Management areas versus indicators
- o Planning for contract management
- o Critical areas to be monitored
- o Critical indicators during performance

B. MANAGEMENT AREAS VERSUS INDICATORS

While the difference between a management area and a performance indicator may be intuitively obvious, this researcher feels that it is important to set forth the distinction. The FAR, Subpart 42.302, lists several required functions of CAOs. Other literature refers to these functions as areas that CAOs are responsible for monitoring. Furthermore, some literature refers to indicators and areas almost synonymously. This researcher views contract management functions as described in the FAR as either an area to be monitored or a function to be performed. This distinction is based upon whether the function listed in the

FAR requires an ongoing process or less frequent, perhaps one time, event. For example, FAR, Subpart 42.302 a(9), "establish final indirect cost rates," would be considered a function. In contrast, a management area is a much broader concept that may involve several functions required of contract administrators. For example, FAR, Subpart 42.302 a(16), "monitor contractor's financial condition . . .," would be classified as a management area because it involves several functions such as continued financial analysis, progress payment reviews, etc.

The main point of this section was to distinguish between management areas and performance indicators. A management area is broad ranged and involves a grouping of functions and events that require an ongoing process of monitoring. A performance indicator is a signal that occurs within an area. This signal may occur either when an event takes place or fails to take place. A performance indicator or signal is not always obvious and may require an intuitive interpretation for the ACO.

C. PLANNING FOR CONTRACT MANAGEMENT

The need for effective planning in the field of contract administration is just as important as any other management field. This researcher feels that the old adage, "an ounce of prevention is worth a pound of cure," should be the driving

philosophy of contract administrators. There are endless regulations, articles, and literature that point out the importance of planning. Planning is not only emphasized throughout the literature, it is required by FAR, Subpart 7.1. However, the data obtained by this researcher, through the survey and telephone interviews, indicated that planning for the management of contracts is not being consistently conducted by contract administrators. Furthermore, the data suggest that whatever planning being conducted, is only being done so for the large, high dollar contracts.

Of those responding to the survey questions regarding milestone type planning, only 43% provided a positive response. More importantly, the data obtained through the survey indicated that much of the contract management planning being conducted was not structured or tailored to the individual procurement. This researcher feels that this type of planning is unstructured and too simplistic to ensure adequate performance of the contract. It is possible to assume that many respondents did not realize the importance of providing a detailed structure of their contract management planning or system on the survey. However, in drawing a conclusion, this researcher took into account the following:

1. Several respondents did comment that they were not proactive, did not have an organized performance management

plan, or were not even aware of any type planning, and that the typical workload for ACOs was excessive.

2. Two respondents (out of 31) did provide very detailed descriptions of their performance management plans or systems.

The above information leads this researcher to believe that prior planning or development of performance management plans, are not being conducted. To further augment this analysis, the survey question addressing passive indicators, which would normally surface through milestone type planning, only received a 58% response rate. Therefore, this researcher has drawn the conclusion that planning for the management of a contract during performance, is not universally being performed. Finally, this researcher feels that the lack of time and resources, coupled with required workload, is the primary cause for the lack of planning.

D. CRITICAL AREAS FOR MONITORING

This section will present the six areas that the data indicated are consistently monitored and considered critical by ACOs. Furthermore, this section will present an analogy showing that there is a hierarchical relationship between these six areas.

1. Common areas monitored during performance.

As discussed earlier, literature research has identified five areas that should be universally monitored by ACOs.

These areas are: Purchasing, Receiving, Financial, Technical, and Quality. However, such research also showed that the primary performance indicators will surface within the areas of Financial, Technical, or Progress. The data obtained through the survey indicated that the common areas monitored by ACOs are: Quality, Production, Progress, Delivery, Technical and Finance. The areas of Quality, Production and Delivery were added to this list due to the consistent input of these areas by the respondents on many questions. Data obtained through this research did not produce significant information for this researcher to draw any conclusions about why the areas of purchasing and receiving were not commonly monitored.

2. Hierarchical relationship.

The data obtained through the survey, question number six, showed that most of the contract administrators considered all areas equal in providing early warning indicators of contractor difficulty. However, when asked to rank the areas in order of priority, question number seven, the contract administrators clearly indicated progress as the most important area, with "all areas being equal" ranking second. Additionally, delivery was not listed as an area on the questionnaire, however 33% of the respondents commented that it was a critical area to monitor. This researcher feels that the higher emphasis placed on progress by contract

administrators, is because they conceptually tie it to the major focus of the contract, delivery. Furthermore, progress and delivery are broader areas and can be adversely impacted by difficulties in any of the other areas commonly monitored.

In further consideration of the data obtained from question seven, the survey respondents ranked all areas virtually equal when indicating their second priority area to monitor. Again, this indicates to this researcher that the contract administrators would consider all areas equal, if delivery or progress were not areas to be considered.

This researcher concludes that some hierarchical relationships exist among the six areas most commonly monitored by ACOs. At the top of this relationship is Delivery. Delivery is considered the most important area because of the critical impacts of its failure to occur. If Delivery does not take place, the contractor fails.

Second within the hierarchy is Progress. If Progress is not being made by the contractor, Delivery will not take place.

Finally, this researcher classifies Technical, Financial, Quality and Production as equals and at the bottom of the hierarchy. These four areas are classified as equal because any of these areas can affect Progress which will affect Delivery. Furthermore, this researcher concludes that an interacting relationship exists between these four areas.

This relationship is founded upon the conclusion that adverse developments within any one of these four areas, may adversely affect another. For example, the data clearly indicated that an adverse development within the Financial area can easily lead to resource problems, thus causing shortfalls within any of the other areas. Similarly, an adverse development within the Technical area may easily cause cost overruns or quality problems. Based upon the data, this researcher could develop many examples of this relationship between these four areas. In summary, this researcher concludes that this relationship exists between all four of areas.

E. CRITICAL INDICATORS DURING PERFORMANCE

The data clearly show that contract administrators recognize that "indicators of contractor difficulty," that may lead to default, do surface during contract performance, within the six areas listed above. This analysis will focus primarily on the passive and active indicators that appear within the areas questioned in the survey (Progress, Financial, Technical). Furthermore, the survey respondents provided additional valid indicators besides those of the literature that should also be monitored by contract administrators. All indicators that are valid based upon this research, are discussed in Chapter III and included in the model outlined in Chapter V. The following analysis will

consider the indicators identified through the literature with respect to the data obtained through the survey.

1. Passive Indicators

Passive indicators are those signals that surface but require an intuitive interpretation and insight on the behalf of the observer. An example of a passive indicator would be the failure to receive a required report. The ACO should intuitively consider this indicator and the underling reasons for the contractor's failure of submission. Furthermore, the ACO would have to further investigate the specific circumstances.

a. Post-Award Survey

The data obtained from the survey presented passive indicators that were not adequately addressed in the available literature. Passive indicators may first surface in the Post-Award Conference. The literature did address Post-Award Conferences, however from a different perspective. The focus that the literature made on Post-Award Conferences was directed at preventing default by ensuring requirements are clearly understood. However, the survey data show that problems can be anticipated not only if the contractor expresses a lack of understanding during the conference, but also if the contractor begins to challenge requirements/specifications or immediately request waivers or

deviations. Furthermore, problems can be anticipated if the contractor and the ACO develop an adversarial relationship during the conference that is not settled. The issue of adversarial relationships will be further addressed below.

b. Communication

The available literature did not address the indicator of ineffective communication, both oral and written, between the contractor and the ACO. This researcher defines ineffective communication by the contractor to the ACO as: a failure to respond or a slow response, to phone calls, FAXes, letters, or responses that are sloppy or inaccurate. The survey responses showed that these are strong indicators of potential problems, normally caused by the contractor attempting to avoid or delay the ACO. This researcher concludes that this avoidance by the contractor may create or increase the adversarial relationship between the two parties. Therefore, the ACO may not only be faced with an increasing adversarial relationship, but also due to a lack of communication, the inability to determine the underlying problem.

c. Reports

Failure to receive a report is a passive indicator (does not necessarily mean something did not happen, it just means that a report was not received). Although this

indicator was discussed extensively in the literature, the survey respondents did not comment as to the value of this concept. It is this researcher's conclusion that the reports are not looked upon by contract administrators as effective indicators. This conclusion is drawn from the comments of the survey respondents indicating a lack of time to effectively review reports quickly, the lack of exposure to reports, and the general distrust of reports prepared by the contractor.

This researcher feels that the reason the literature does not adequately address the communication indicators as well as the contract administrator's lack of trust (expressed in the responses to the survey), is due to the era in which this literature was written. Most of the literature concerning this subject was published in the very early 1980s, when adversarial relationships were the nature of doing business with the Government. Furthermore, 71% of the contract administrators responding to this survey have over 10 years of Government experience, and 26% have between 6 to 10 years. Therefore, 97% of the respondents to the survey were Government ACOs during the 1980s. Moreover, the dated material coupled with the survey respondents' years of experience, suggests the era in which adversarial relationships and mistrust were the generally accepted business practice. This might explain why the prior research

and survey data did not adequately address these passive indicators.

This researcher concludes that while these indicators are passive (a sign that something may be wrong), they are just as important as the other more obvious active indicators.

2. Active Indicators

Active indicators are those signals that surface due to either the failure of an event or adverse developments within an area. Although active indicators are normally more visible than passive indicators, their recognition still requires an intuitive insight on behalf of the observer. An example of an active indicator would be adverse information concerning the contractor's technical progress, contained within a report.

a. Progress

The data obtained through the survey indicate that according to contract administrators, the progress indicators provided in the literature are still valid and effective. However, the researcher feels clarification is necessary concerning the interpretation of the indicator: Progress Payment Review. The literature listed progress payment review as an indicator of "Lack of Physical Progress and Financial Difficulty." The survey responses supported this indicator but from only one perspective. The survey

respondents suggested that contract administrators should compare the contractor's request for payment with the time schedule established for the contract as well as the percentage of work completed. In this manner, the amount of progress payments and time frame can be measured against the work completed to ensure that they are commensurate with each other. Conversely, when respondents evaluated the financial indicators individually, only 3% of the survey respondents indicated that progress payment reviews were effective indicators of financial difficulty. It is this researcher's conclusion that a contractor's request for revised progress payments is common and typically accepted as justifiable by contract administrators and, therefore, not an indicator of financial difficulty.

b. Financial

The data obtained through this research indicates the "Financial Difficulty" indicators provided in the literature are still valid and do provide warning of contractor difficulty. However, several comments, provided from the survey respondents question the effectiveness of the latter three indicators presented by the literature. The survey respondents did not question their usefulness, but indicated that by the time they surface, it is normally too late to provide assistance. This researcher attributes the necessity of timeliness, in order for the Government to

provide assistance, to the overall financial climate of the current economy within the United States. Once a contractor becomes financially weak, the state of the economy does not provide for easy recovery.

c. Technical

The data obtained through this research do not provide a clear indication of the current validity of the technical indicators provided through the literature. Only 69% of the survey respondents confirmed that the indicators provided by the literature were effective. The comments providing a negative response, indicated that the technical reports were either not readily available or were ineffective, without further explanation. Additional comments made by the respondents suggested that ACOs do not have the required expertise and without advise by the technical specialist, the reports are ineffective. This researcher concludes that ACOs do not have the needed technical knowledge for an individual analysis of the reports. Furthermore, this researcher concludes that contract administrators most likely shy-away from areas in which they do not feel comfortable. Furthermore, ACOs most likely rely too heavily upon the expertise of the technical specialist assigned to the contract. Therefore, without frequent and effective communication, technical indicators are likely to be overlooked by ACOs. Additionally, the data obtained from the

survey suggests that 75% of the respondents did not consider request for waivers or deviations as good indicators of technical difficulty. This researcher concludes that this lack of support for these technical indicators is either due to the ACO's lack of technical insight, or the contracts they are monitoring are low technology programs. This researcher justifies these conclusions based on the consistent literature support for these indicators.

3. Other Indicators

The data obtained through the survey identified several indicators, both passive and active, within all areas. Although these indicators were identified through the survey, the data were not specific enough to analyze their actual effectiveness and develop a priority or hierarchical relationship among them. However, these indicators will be used in the model presented in Chapter V.

F. SUMMARY

This chapter analyzed the data presented in Chapter III. The data obtained through the survey were contrasted with the information obtained from the literature. Furthermore, any inconsistencies between the literature and the survey data were analyzed and conclusions were drawn by the researcher. Chapter V will present a "Performance Indicator Management

Model," developed by this researcher based upon the analysis of the data obtained through this research.

V. PERFORMANCE INDICATOR MANAGEMENT MODEL

A. INTRODUCTION

This chapter will present a Performance Indicator Management Model that was developed using the data obtained from the literature and the survey. The primary focus of this model is to present the relationship between the various areas to be managed during contract performance and the indicators that may arise. The scope of this model and its application, is restricted by the scope used to gather the research data. Therefore, this model is structured primarily toward Fixed-Price Supply-type Contracts. Its applicability to other types of procurement is beyond the scope of this thesis. Furthermore, the areas and indicators contained within this model are not intended to be comprehensive nor all inclusive, but reflect the data obtained through this research effort.

B. AREA RELATIONSHIPS

Performance management should be tailored to the individual procurement, on a case-by-case basis, dependent upon the type of contract, item being procured, history of the contractor, risk, and critical processes to be performed. This is true even though research has shown that there are six areas and many indicators that are systemic and should always

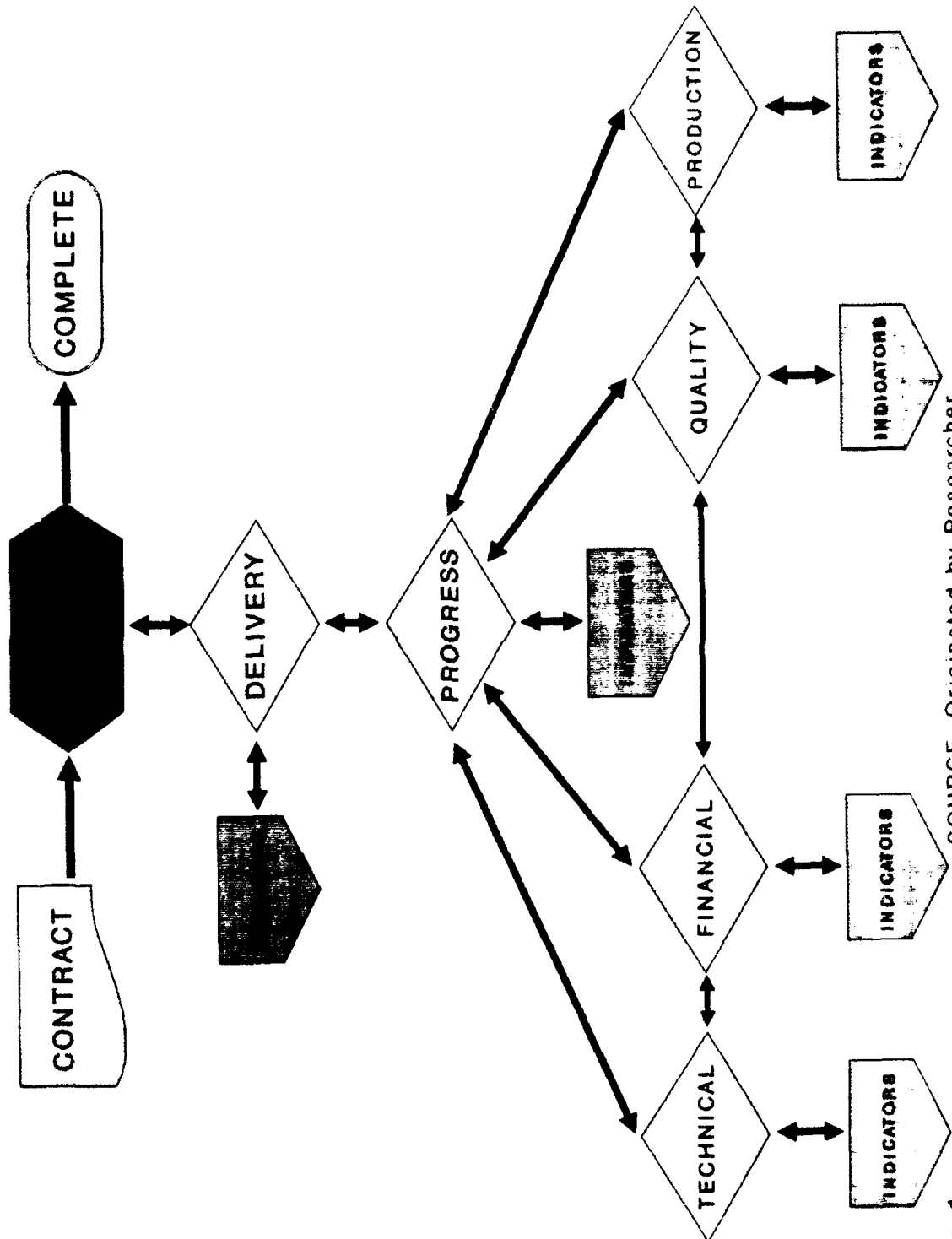
be monitored during contract performance. However, the amount of emphasis placed upon each area may vary, dependent on the circumstances of the procurement.

This researcher has developed a hierarchical relationship among the six systemic areas to be monitored. This relationship was established based upon the dependency of two areas (Delivery and Progress) on the interrelationship of the remaining four areas (Technical, Financial, Quality, and Production). Using a TQM type approach, this researcher has classified Delivery as the primary area or the end product of contract performance management. Progress has been classified as a secondary area to Delivery. Finally, the remaining four areas are classified as processes of the primary and secondary areas. Figure 1. presents a graphical relationship between the performance management areas mentioned above.

1. Delivery

For a Supply-type Contract, Delivery is the end product of performance management. This classification is based upon one qualifier, acceptable delivery. Acceptable delivery means that the item meets all the requirements of the contract. This researcher concludes that if the four processes of performance management are within tolerance, then the end product or delivery will be acceptable. Research has distinguished systemic indicators directly related to

CONTRACT MANAGEMENT AREAS



SOURCE: Originated by Researcher

Figure 1.

Delivery, which may lead to default. These indicators are discussed later within this model.

2. Progress

If the contractor fails to make progress, delivery will not take place. Therefore, Progress has been classified as a subsidiary area to that of Delivery. Furthermore, progress may be affected by adverse developments within any of the four remaining areas, classified as processes. While there are systemic indicators directly related to Progress, contract administrators should focus their efforts directly toward the process.

3. Processes

This researcher has classified four areas as processes. These areas are: Technical, Financial, Quality, and Production. Adverse developments in any of these areas may prevent the contractor from making progress, as well as delivery, thus breaching the contract and presenting a potential default situation. More important, adverse developments in one of these areas may cause adverse developments in another. Therefore, these areas are not only interrelated to each other, but also they may be dependent upon each other, as graphically depicted in Figure 1.

C. INDICATORS

Each of the six areas listed above have systemic indicators that may provide an advance warning of contractor difficulty, prior to default. While the research did not provide specific enough data to create a hierarchy among these indicators, enough data were obtained to classify these indicators as systemic. Systemic is defined by this researcher as those indicators that are prevalent and pertinent to all types of items being procured. Clearly, dependent upon the type of procurement, certain areas and indicators may provide the contract administrator a better indication of contractor performance. For example, the Technical area may be a contract administrator's main focus, if the item involves technical innovation and is a "first time production," for that specific contractor. It is important to note that the higher-up within the hierarchy of areas, the more serious the indicator, with respect to potential contractor default. Furthermore, it is important to understand that a passive indicator may eventually develop into an active indicator as well as an indicator in one area may cause difficulty in another. This relationship is referred to by this researcher as the interrelationship between the areas and indicators.

1. Delivery

The area of delivery has two systemic indicators, one passive and one active. The passive indicator is when the ACO receives a notice from the contractor of an expected late delivery. The active indicator is when the delivery is actually delinquent. As mentioned above, an indicator within the area of Delivery, is one of extreme seriousness because, either the contractor has already breached the contract or is about to do so. These indicators are depicted in Figure 2.

2. Progress

Progress has five systemic indicators, two passive and three active. The passive indicators include: failure to receive required reports and when the contractor has been experiencing delays on other programs. The active indicators include: progress payment reviews that show payment is not commensurate with the amount of progress made by the contractor, reports that contain adverse information about progress, and when the ACO receives an actual request for a delivery extension. The latter active indicator, in this researcher's opinion, is the best indicator of failure to make progress. A request for delivery extension is a direct indication that progress is most likely not being made. These indicators are graphically depicted in Figure 3.

AREA: DELIVERY

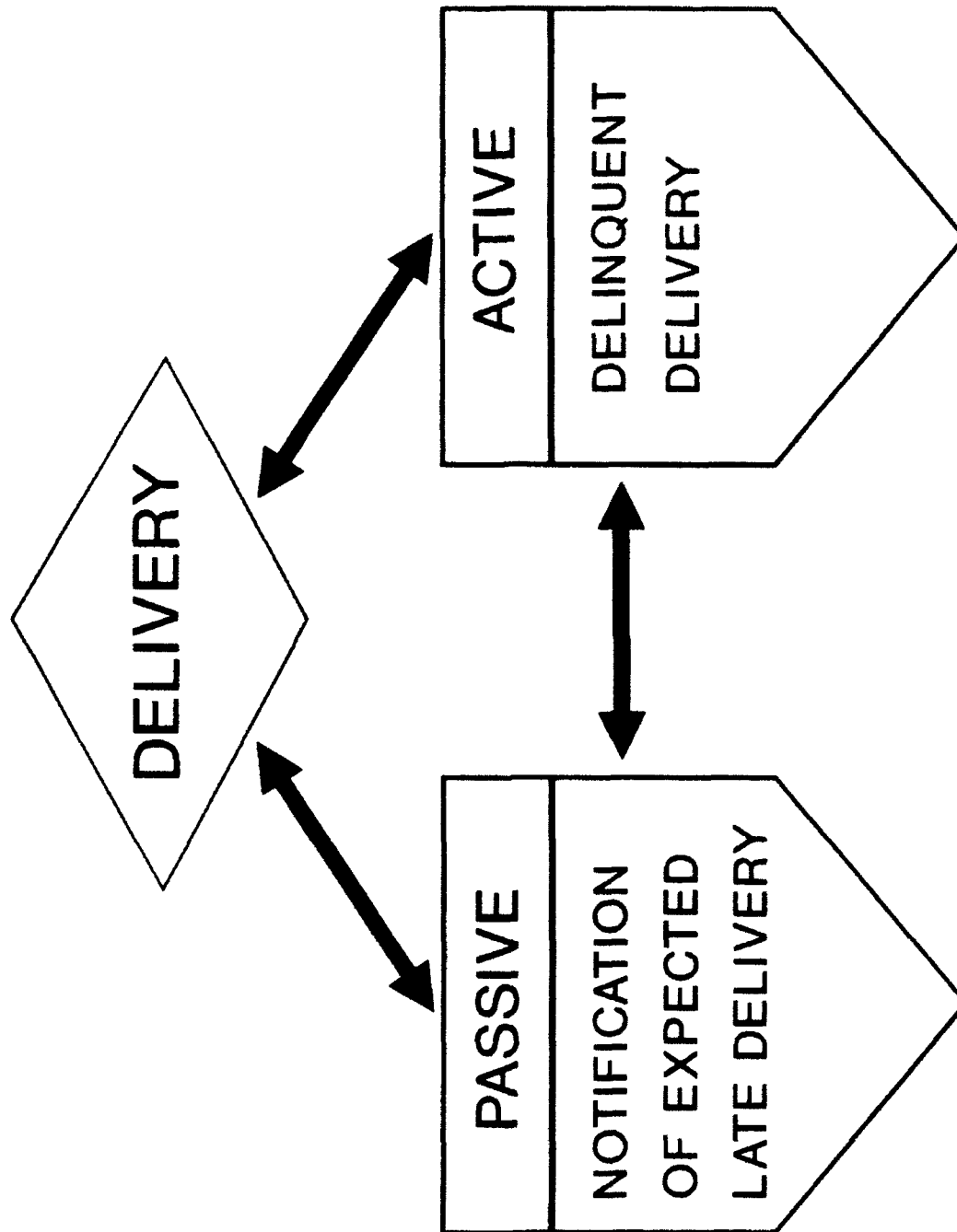
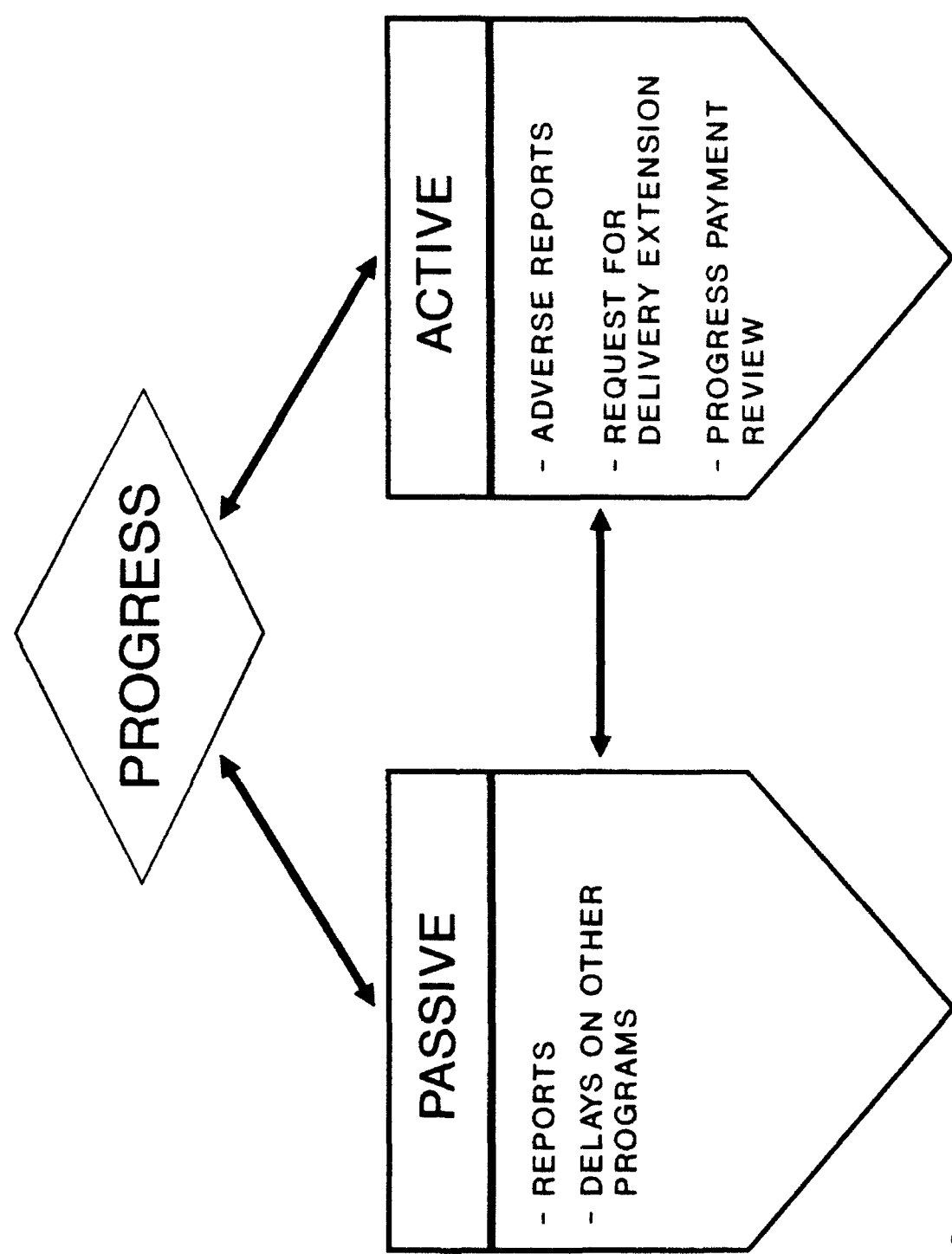


Figure 2.

SOURCE: Originated by Researcher

AREA: PROGRESS



SOURCE: Originated by Researcher

Figure 3.

3. Technical

Within the Technical area or process, there are many indicators, both passive and active, as listed below.

a. *Passive Indicators*

- o Request for Waivers or Deviations
- o Key Technical Personnel Departures
- o Request for Government Technical Assistance
- o Questionable TDPs
- o Questioning/Challenging Government Specs.
- o Repetitive ECPs made by the contractor
- o Request by the contractor to redefine Test Requirements
- o Failure by the contractor to provide CDRLs or required drawings

b. *Active Indicators*

- o Technical reports containing adverse information
- o Returned Items or Lot rejections for technical failures
- o Difficulty in producing "first article"
- o Technically non-conforming components
- o Failed testing due to technical problems

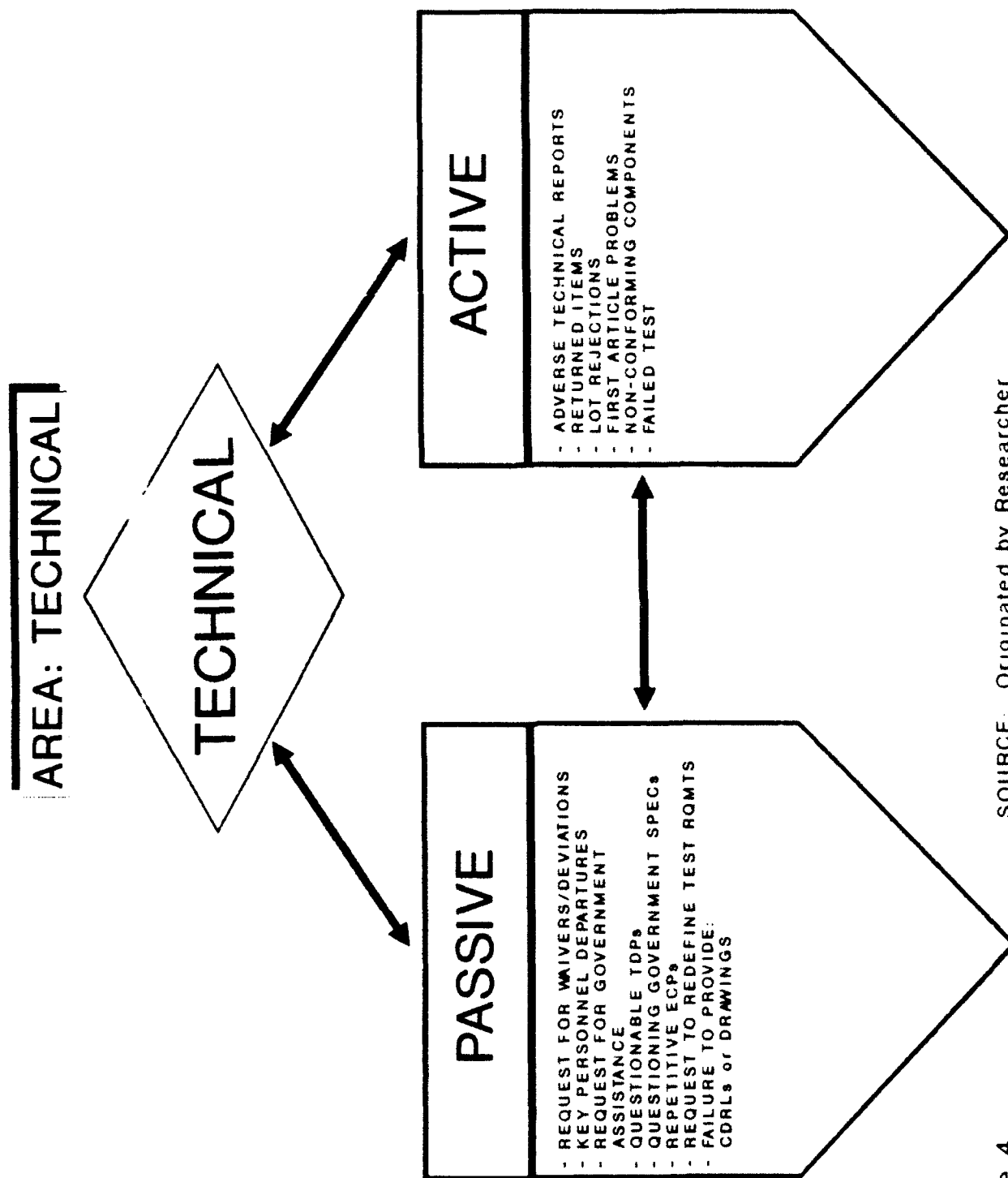
These indicators and their interrelationships are graphically displayed in Figure 4.

4. Financial

Within the Financial area or process, there are many indicators, both passive and active, as listed below.

a. *Passive Indicators*

- o Complaints made by the subcontractors or vendors that they are not being paid by the prime
- o Adverse information found within the Dun and Bradstreet reports



SOURCE: Originated by Researcher

Figure 4.

- o When the contractor revises the financial statements of the firm
- o Notification of Bank Assignments
- o When a poor loss ratio has been calculated against the progress payments made
- o Reports received from DCAA that show a deteriorating financial position

b. Active Indicators

- o ACO reports of adverse financial developments
- o The contractor is experiencing cost overruns
- o The contractor requests an upward price adjustment
- o The contractor requests revised payment provisions, (e.g., request for Progress Payments after award)
- o Progress Payment Reviews

These Financial indicators and their interrelationships are graphically depicted in Figure 5.

5. Quality

Within the Quality area or process, there are many indicators, both passive and active, as listed below.

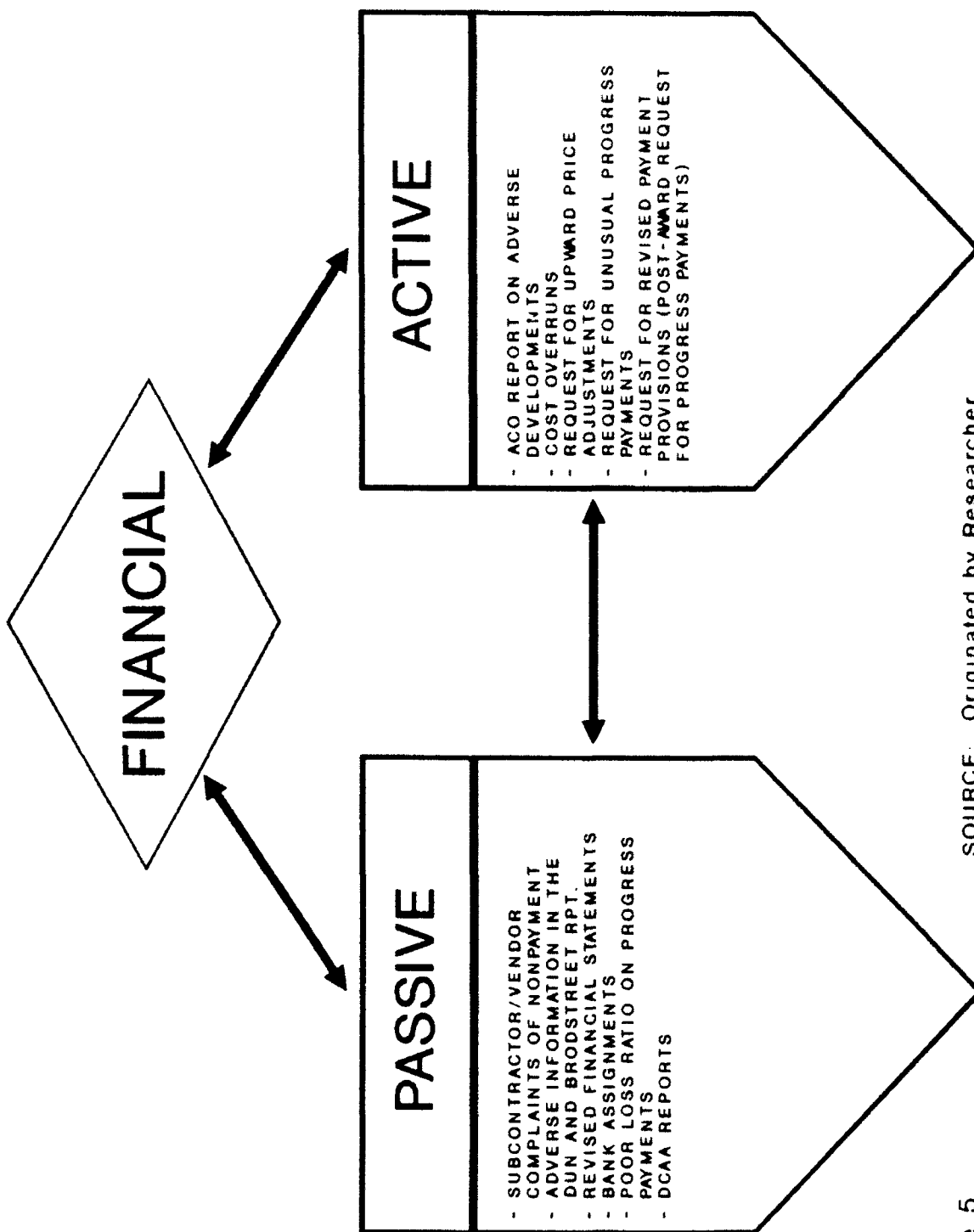
a. Passive Indicators

- o If the contractor has a prior history of poor or questionable quality
- o Adverse quality reports from the Government QAR
- o Adverse reports received from the contractor indicating quality problems or requesting clarification of standards
- o If the subcontractor or vendor has a prior history of poor or questionable quality

b. Active Indicators

- o The failure of quality inspections
- o Lot rejections for quality deficiencies
- o Subcontractor or vendor items received that fail quality inspections
- o Raw materials that have questionable quality or have failed quality inspections

AREA: FINANCIAL



SOURCE: Originated by Researcher

Figure 5.

These Quality indicators and their interrelationships are graphically depicted in Figure 6.

6. Production

Within the Production area or process, there are many indicators, both passive and active, as listed below.

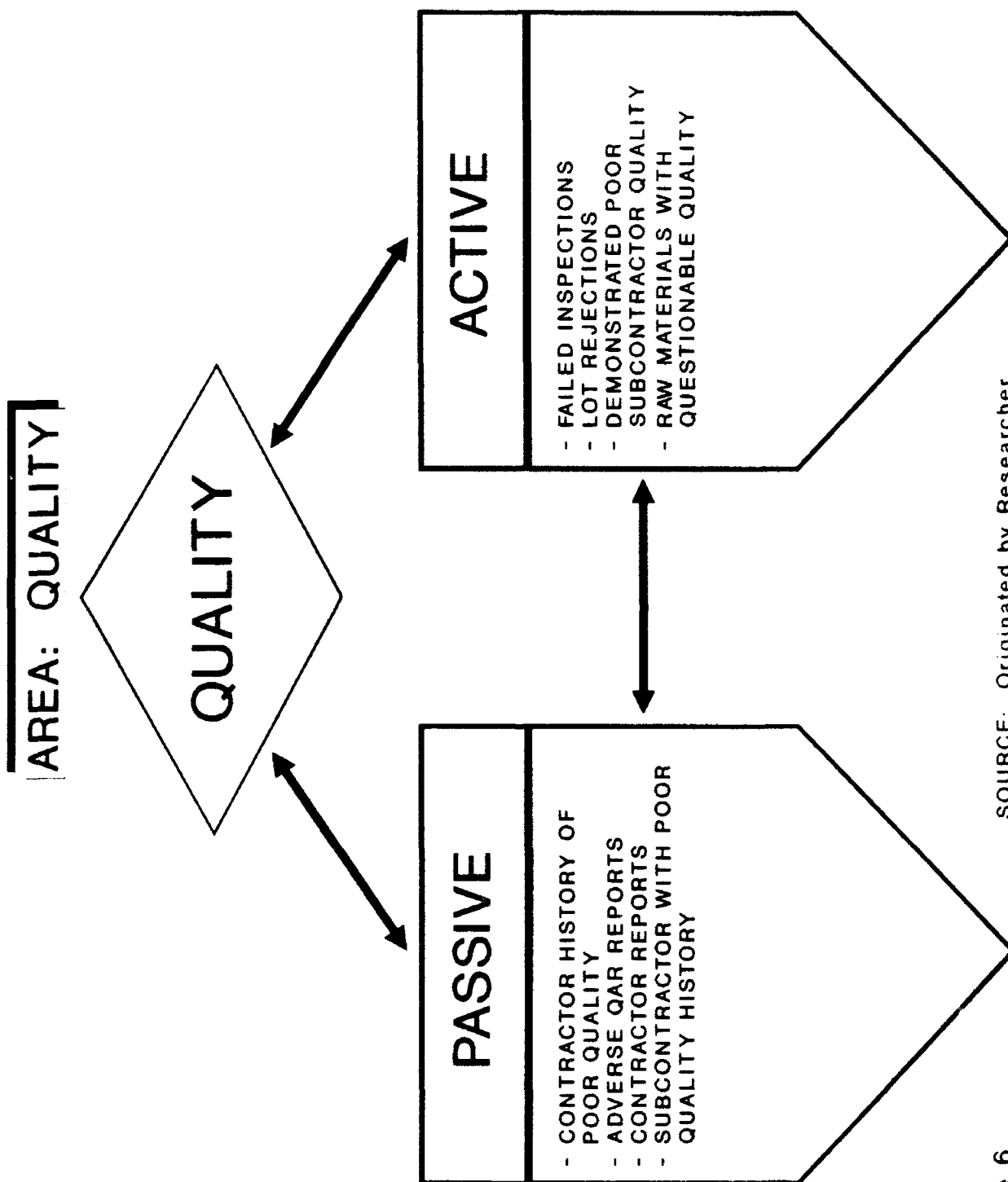
a. Passive Indicators

- o Reports received that show potential production problems
- o When the tooling intended for use is unproven or has experienced prior failures to produce acceptable items
- o When the subcontractors or vendors have a history of being non-responsive or providing non-conforming parts
- o When the item being produced is a new item or it is the first time for this contractor to produce the item
- o When the contractor revises his production plans or schedule
- o When the contractor has questionable facilities or equipment (e.g., old/lack of equipment)

b. Active Indicators

- o When the contractor experiences problems in obtaining the required material
- o When subcontractors or vendors are failing to comply with the required schedule
- o When the contractor is experiencing difficulty in passing tests that can be traced to poor production methods or equipment.

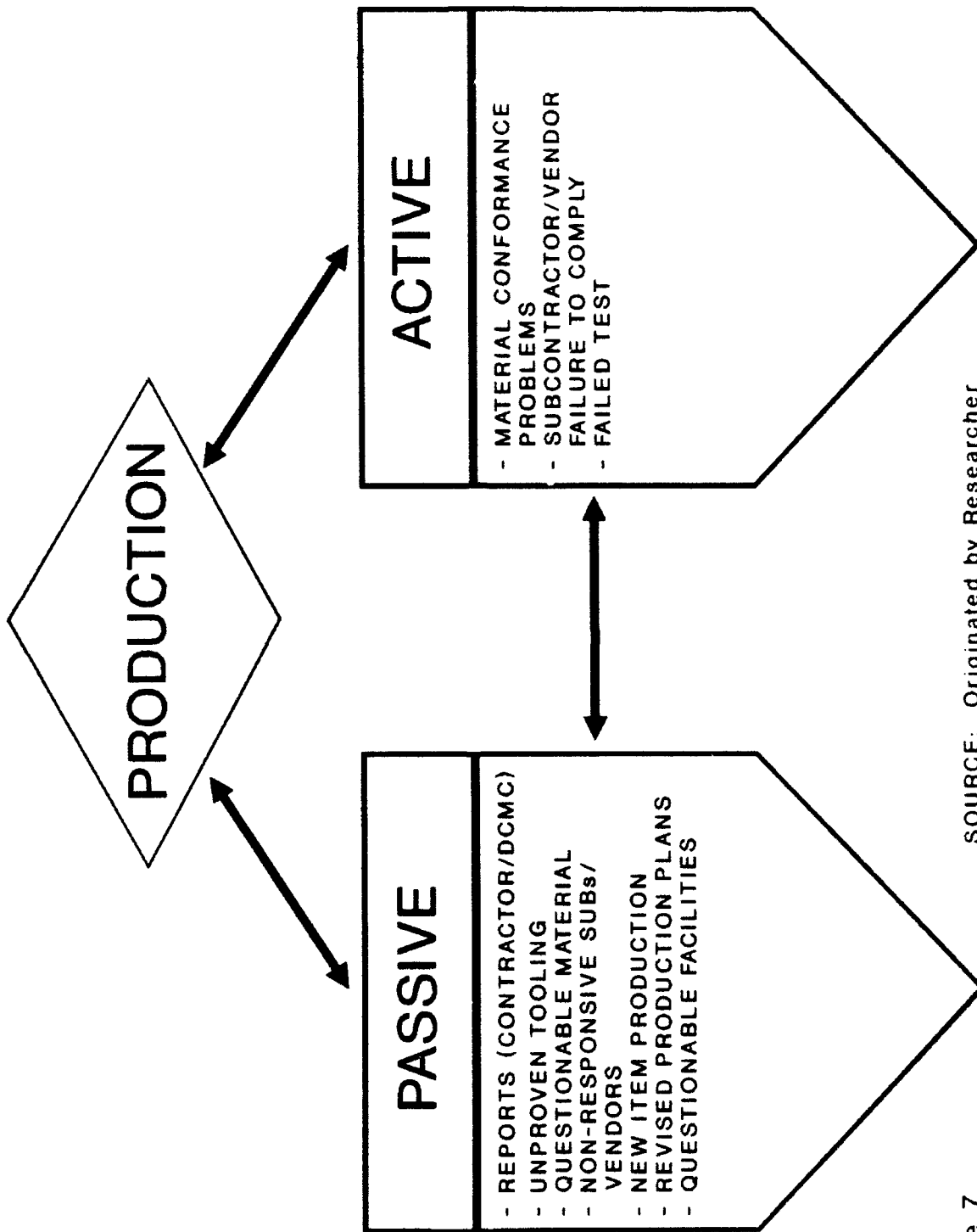
These Production indicators and their interrelationships are graphically depicted in Figure 7.



SOURCE: Originated by Researcher

Figure 6.

AREA: PRODUCTION



SOURCE: Originated by Researcher

Figure 7.

7. Generic Indicators

There are two passive indicators that are generic and can apply to any of the areas listed above. These indicators are:

a. *Communication*

If the communication between the Government and contractor becomes strained, or the contractor fails to respond to either written or oral attempts to communicate, or if the communication received from the contractor is sloppy or inaccurate, these are good indicators that problems may have developed. Further investigation by the ACO would be needed to determine the significance of any problems and the areas that may be affected.

b. *Reports*

In all of the areas listed above, many reports are required. These reports may be required either by the Government specialist assigned to the contract or by the contractor. Failure to receive these reports on time is a good passive indicator of potential problems. Again, further investigation by the ACO would be necessary to determine if a problem exists and the area affected.

8. Necessary actions to be taken

The research did not provide specific actions to be taken for each indicator listed above. However, research did show that the actions necessary will be dependent upon the nature of the indicator and the area in which it surfaced. The only generic action that research provided was that of timely communication between all individuals and agencies concerned. This communication will ensure that: all details concerning the potential problems are identified, all interested parties are involved in attempting to identify or solve the problem, the Government has a decreased chance of forfeiting the right to T for D if necessary, and that those affected by the problems are made fully aware of possible circumstances (e.g., PCO or Project Manager).

D. PERFORMANCE MANAGEMENT TOOLS

In Chapter II of this research, several tools of contract administration/performance management were identified. Research has presented two tools important in the identification of early warning signals or indicators of contractor difficulty. These tools are Post-award orientation conferences and Site Visits.

1. Post-award orientation conferences

This event is particularly effective in identifying passive indicators. Some examples of potential passive indicators during the conference are:

- o when the contractor immediately requests clarification of specifications
- o when the contractor immediately submits change proposals
- o when the contractor requests clarification of the contractual requirements
- o when the contractor shows-up with a "claims" lawyer

The above passive indicators are not intended to be a comprehensive list. In fact, many indicators listed in the subsequent paragraphs may be identified during this conference. Most important, during the Post-award orientation conference, the ACO must be perceptive to the passive indicators that may arise.

2. Site Visits

The data obtained through this research suggested that the best tool for an ACO to identify potential contractor problems, is to conduct periodic site visits. The actual indicators that can be identified, both passive and active, during a site visit are too many to list. However, although research showed that a site visit (hands-on) is the best method of determining the contractor's overall progress in all areas, research also indicated that due to ACO's workload, it is difficult to conduct as frequently as necessary.

E. SUMMARY

This chapter presented a Performance Indicator Management Model, which can be used by contract administrators, in improving and increasing their efficiency of monitoring contracts during performance. This model identified the critical areas to monitor in a hierarchial manner as well as the indicators within each area. Chapter VI will present the conclusions and recommendations of this research.

VI. CONCLUSIONS AND RECOMMENDATIONS

A. GENERAL

The ACO, as the team leader in contract administration, must coordinate the efforts of all team members as well as correlate the information obtained. The major focus of contract administration is to monitor compliance of the contract provisions by the contractor and ensure delivery of the item being procured. If a contractor fails in performance, the Government will not receive the item needed in a timely manner. Therefore, an increased awareness by ACOs of early warning signals and the performance areas in which they occur, can aid in the detection as well as the prevention of contractor default. Furthermore, by developing critical areas of performance management, ACOs can plan more efficiently and maximize the utilization of their limited resources, especially time.

B. CONCLUSIONS

Five primary conclusions have been identified as a result of this research.

Conclusion One. There is a lack of consistent, tailored planning for the management of contracts during performance.

The planning for contract administration during performance is not being consistently conducted by contract administrators. The planning that does exist is not specifically tailored for each individual procurement. Additionally, milestone planning is only being conducted for high dollar ACAT I contracts.

Conclusion Two. ACOs must closely monitor the following six key areas during contract performance: Delivery, Progress, Technical, Financial, Quality, and Production.

Literature and research have identified six key areas that are critical to monitor during contractor performance. Furthermore, research has identified a hierarchical relationship and an interactive relationship between these areas. The hierarchical relationship is based upon Delivery and Progress being the two most important areas to be monitored. Furthermore, the remaining four areas are subsidiary to Delivery and Progress. Difficulty in one area may lead to difficulty in another, thus establishing an interrelationship between these areas. Prudent monitoring of these six areas will provide the ACO a comprehensive oversight of the contractor's performance and will aid in ensuring compliance of the contractual requirements.

Conclusion Three. There are systemic indicators, passive or active, that can provide advance warning of contractor difficulty prior to a default.

Literature and research have identified 28 passive and 22 active indicators that surface within the key areas that are monitored by ACOs during contract performance. Indicators may be classified as either passive or active dependent upon the circumstances in which they arise. Passive indicators are those signals that surface but require an intuitive interpretation and insight on the behalf of the observer. Active indicators are those signals that surface due to either the failure of an event or adverse developments within an area. The indicators identified through this research are systemic because they are not restricted to any specific item being procured.

Conclusion Four. Performance-based Management (PBM) is a new and valuable tool being implemented within DLA.

The initiative of PBM will allow contract administrators to employ the resources available in a more effective and efficient manner. PBM emphasizes resource allocation based upon contractor performance, rather than the dollar value of the contract. Additionally, PBM incorporates many concepts of TOM and places emphasis on the critical processes that the contractor must perform.

Conclusion Five. Communication is a key tool in the successful management of contracts during performance.

Communication is one of the most effective tools in the management of contracts during performance. Effective communication between the members of the contract administration team is essential in order to ensure all critical areas are monitored and adverse developments are addressed. Furthermore, lack of communication between CAO personnel has often resulted in the Government losing its right to terminate the contract for default.

C. RECOMMENDATIONS

The following recommendations are made based upon the above conclusions.

Recommendation One. Planning for the performance management of contracts must take place prior to performance.

ACOs must begin their planning for the performance management of a contract prior to the performance phase of contract administration. This planning must include a review of all historical information available such as pre-award survey, contractor past performance history, and the nature of the procurement. Furthermore, proper planning will allow ACOs to focus their limited resources in the right direction and will ensure that potential trouble areas receive the needed attention. With the work load placed upon ACOs, coupled with

their limited resources, effective planning is the best mechanism to ensure acceptable delivery of the item being procured.

Recommendation Two. Performance-based Management (PBM) should be utilized by CAOs in the resource allocation and planning for performance management of a contract.

PBM is among the newest initiatives taken within the contract administration field to ensure efficient allocation of the limited resources. PBM utilizes a risk management approach and will identify those areas of the contractor's organization that need additional or special attention. The continued emphasis of PBM is essential within the contract administration field.

Recommendation Three. ACOs must focus their efforts and planning to ensure monitoring of the six identified critical areas.

Research has identified six areas of contract performance in which contractors will typically have problems. These six areas provide a comprehensive coverage of contractor performance. Furthermore, it is within these areas that the systemic early warning indicators are most likely to surface. Therefore, at a minimum, these six areas must be included in the performance management of any contract. Finally, contract administrators should consider the hierarchial structure of

these areas, as depicted in Figure 1., in focusing their management efforts and resources during contract performance.

Recommendation Four. ACOs must be aware of and stay attuned to the early warning signals or identifiers of contractor difficulty that have been identified through this research.

The identification of early warning signals is essential during contract performance management. Although a signal may surface during performance, the recognition of the signal may require an intuitive interpretation by the ACO. These indicators (or signals) may be classified as either passive or active. Despite the classification, ACOs must treat all indicators as early warning signals of potential contractor difficulty in complying with the contractual provisions. Therefore, ACOs must view all actions and inactions by the contractor so that they may recognize these signals when they appear. Finally, ACOs should utilize Figures 2 through 7, to keep themselves abreast of the most common indicators that may appear.

D. REVIEW OF RESEARCH QUESTIONS

To adequately address the primary research question, four subsidiary questions were developed. The responses to these subsidiary questions will be summarized, followed by a summary response to the principal research question.

Subsidiary question One. What is the purpose of contract administration, relative to successful contractor performance?

The overall purpose of contract administration is to ensure that the contractor complies with the requirements of the contract and that an acceptable delivery of the item is made. The functions and responsibilities of ACOs are very broad and complex, thus many technical specialists are necessary to ensure that the required expertise is available to ACOs during contract performance management.

Subsidiary question Two. What are the main areas monitored by contract administrators and what are the principal tools used in this process?

Research has shown that there are six primary areas monitored by contract administrators. These areas include: Delivery, Progress, Technical, Financial, Quality, and Production. Out of these six areas, Delivery and Progress rank higher within the hierarchy. There are several tools available to ACOs to monitor contractor performance. These tools include: Planning, Communication, Milestone Management, Site Visits, Reports, and PBM. Although the first five of these tools are traditional, PBM is a new initiative and offers significant improvement in the management of a contractor's performance and ensuring compliance with the contractual obligations.

Subsidiary question Three. What are the key signals that contract administrators should monitor and track relative to contract performance?

Research has shown many signals that surface within the six critical areas monitored by ACOs. These signals can be classified as either passive or active, with equal importance. Although the data did not allow this researcher to develop a hierarchy among these signals, one was developed among the six areas to be monitored. Therefore, the signals that may appear within the areas that are at top of the hierarchy, would be more critical than those within the lower echelons. This criticality is based upon the seriousness and the greater potential for default that accompanies the two areas, Delivery and Progress.

Subsidiary question Four. What actions should contract administrators take in response to these key signals to protect the best interests of the Government?

The most important action that an ACO should take upon the recognition of an indicator or signal of contractor difficulty, is to communicate with all parties involved. Communication is the key to team work in identifying and resolving any difficulties or problems that the contractor may be experiencing. Furthermore, communication is the best tool to ensure that the Government's interest is protected and that the right to T for D is not lost.

Primary research question. What are the systemic indicators that provide early warning signals to Government contract administrators that a contract is in jeopardy of reaching default status?

This research has identified many indicators that provide early warning signals to Government contract administrators that suggest a contractor is having difficulty and may not comply with the contractual obligations, thus breaching the contract. These indicators have been classified as either passive or active and categorized within the six major areas monitored by contract administrators. The most difficult task of an ACO is to identify when these indicators arise because it requires intuitive observation. A summarized list of these indicators, by category, is contained in Chapter V of this research.

E. AREAS OF FURTHER RESEARCH

In Chapter V of this research, a Performance Indicator Model was presented. Within this model, a hierarchy of areas was set forth. However, the data obtained from this research effort did not allow this researcher to establish a priority or hierarchy among the indicators. Further research is necessary to validate the hierarchy of these areas and to learn if a hierarchy exists among the indicators. This further research could provide better definition of the areas

and indicators that are monitored by ACOs. Comprehensively, further research would allow the elements of this model to be validated, improved upon, and its application expanded. Finally, further research should incorporate a broader scope, with a larger population and include additional contract types.

APPENDIX A
SURVEY RESPONDENTS

1. Defense Contract Management Area Operations, Boston
Boston, MA 02210-2138
2. Defense Contract Management Area Operations, Garden City
Garden City, NY 11530-4761
3. Defense Plant Representative Office, General Electric
Burlington, VT 05401-4984
4. Defense Contract Management Area Operations, Springfield
Springfield, NJ 07081-3170
5. Defense Contract Management Area Operations, Detroit
Detroit, MI 48226-2506
6. Defense Plant Representative Office, Allied Signal
Teterboro, NJ 07608
7. Defense Contract Management Area Operations, Atlanta
Marietta, GA 30060-2789
8. Defense Contract Management Area Operations, Orlando
Orlando, FL 32803-3726
9. Defense Plant Representative Office, General Dynamics
Fort Worth, TX 76101-0371
10. Defense Contract Management Area Operations, Twin Cities
Bloomington, MN 55425-1573
11. Defense Contract Management Area Operations, St. Louis
St. Louis, MO 63103-2812
12. Defense Plant Representative Office, Boeing
Wichita, KS 67202-2095
13. Defense Contract Management Area Operations, San Diego
San Diego, CA 92111-2241

14. Defense Contract Management Area Operations,
San Francisco, San Francisco, CA 94066-3070
15. Defense Plant Representative Office, McDonnell Douglas
Titusville, FL 32783-5669
16. Navy Ship Parts Control Center
Mechanicsburg, PA 17055-0788
17. Westinghouse Electric Corporation
Sunnyvale, CA 94088-3499

APPENDIX B

TELEPHONE INTERVIEWS

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4. Mr. Duane Dembinski, DCMAO, Detroit
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5. MAJ Charles F. Minter, USA, DCMAO, Atlanta
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6. Mr. Edward E. Adams, DCMAO, St. Louis
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7. Mr. Virgil J. Schawe, DCMAO, Wichita
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8. CAPT James Anderson, USN, DCMAO, Twin Cities
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9. CPT Steve Tarbay, USA, DCMAO, San Francisco
San Francisco, CA 94066-3070
10. CDR T.R. Schonenberg, DPRO, McDonnell Douglas
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11. Mr. Mahlon McCoy, Navy Ships Parts Control Center
Mechanicsburg, PA 17055-0788
12. Mrs. Nilsa Molina, DCMAO, San Francisco
San Francisco, CA 94066-3070

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